

**ABSTRACT OF THE DISCLOSURE**

A novel method of producing PS is described herein. The method first involves producing PLD enzyme through the use of enzyme-producing microorganisms. The PLD enzyme is reacted with a lecithin and source of serine to produce the phosphatidylserine (PS). The method differs from prior methods in several ways. First, it incorporates a novel strain of PLD enzyme-producing organism in a preferred embodiment. It is also the first known PS production method that allows for the reuse of the enzyme and serine components to enhance efficiency and productivity. It further incorporates a novel solvent system, unique stabilization agents for the PLD enzyme, as well as optimized reaction conditions.